

# Q-LASF03S

$n_d = 1.806040$

$n_e = 1.810741$

$v_d = 40.74$

$v_e = 40.48$

Glass code (d)	806407
Glass code (e)	811405

Spectral l.	Refractive idx
2.058	1.76735
1.970	1.76887
1.530	1.77600
1.129	1.78298
1.064	1.78435
t	1.78553
s	1.79027
A'	1.793683
r	1.796898
C	1.800166
C'	1.801090
He-Ne	1.801957
D	1.805866
d	1.806040
e	1.810741
F	1.819952
F'	1.821116
g	1.831210
h	1.840809
0.389	1.846783
i	1.857743

Coef. disp. form. (pwr ser.)	
A0	3.16995830E+00
A1	-1.21536830E-02
A2	-1.27440597E-04
A3	3.09253962E-02
A4	7.33513997E-04
A5	6.01908390E-06
A6	2.17380961E-06
A7	0.00000000E+00
A8	0.00000000E+00

Partial dispersion	
F-C	0.019786
F'-C'	0.020026
C-t	0.014639
C-A'	0.006483
d-C	0.005874
e-C	0.010575
g-d	0.025170
g-F	0.011258
h-g	0.009599
i-g	0.026533
C'-t	0.015563
e-C'	0.009651
F'-e	0.010375
i-F'	0.036627

Relative partial dispersion	
C-t/F-C	0.7399
C-A'/F-C	0.3277
d-C/F-C	0.2969
e-C/F-C	0.5345
g-d/F-C	1.2721
g-F/F-C	0.5690
h-g/F-C	0.4851
i-g/F-C	1.3410
C'-t/F'-C'	0.7771
e-C'/F'-C'	0.4819
F'-e/F'-C'	0.5181
i-F'/F'-C'	1.8290

Deviation of relative partial disp.	
$\Delta PdC$	0.0013
$\Delta PgF$	-0.0070

Internal CC (80%/5%)	
360/322	

Color Code (80%/5%)	
390/320	

CCI	
B	-
G	-
R	-

Thermal properties	
CTE(-30,70) [1E-7/°C]	52
CTE(100,300) [1E-7/°C]	72
Tg [°C]	568
At [°C]	603
Ht condct. [W/m·K]	0.706
Sp. heat [kJ/kg·K]	0.430
diffus. [1E-6 m2/sec]	0.370

Chemical properties [class]	
Acid res. (surface)	4
Alkaline detergent res.	3
Climate resistance	1
Water res. (powder)	1
Acid res. (powder)	3

Mechanical properties	
Knoop hardness	623 (6)
Abrasion hardness	77
Young's mod. [GPa]	109.4
Shear mod. [GPa]	41.8
Poisson's ratio	0.310
Stress optical coef. [1E-5 nm/cm/Pa]	2.55

Internal trans. (10mm)	
$\lambda$ [nm]	$\tau$
280	0.00
290	0.00
300	0.00
310	0.00
320	0.03
330	0.24
340	0.50
350	0.69
360	0.80
370	0.88
380	0.922
390	0.947
400	0.963
420	0.977
440	0.983
460	0.987
480	0.989
500	0.992
550	0.994
600	0.993
650	0.993
700	0.993
800	0.994
900	0.994
1000	0.995
1200	0.996
1400	0.995
1600	0.993
1800	0.986
2000	0.973
2200	0.942
2400	0.80

Specific gravity	
4.48	

Relative $\Delta n / \Delta T$ [1E-6/°C]																
Temp. [°C]	1.083	t	s	A'	r	C	C'	He-Ne	d	e	F	F'	g	h	0.389	
80 to 90(ref.)	9.1	9.2	9.4	9.8	10.0	10.3	10.4	10.5	10.9	11.3	12.2	12.4	13.5	14.7	15.4	
60 to 80(ref.)	8.9	9.0	9.3	9.5	9.8	10.1	10.2	10.3	10.6	11.1	12.0	12.1	13.2	14.3	15.0	
40 to 60	8.7	8.8	9.0	9.3	9.6	9.8	9.9	10.0	10.3	10.7	11.6	11.7	12.8	13.9	14.5	
20 to 40	8.5	8.6	8.8	9.1	9.3	9.6	9.7	9.7	10.1	10.5	11.3	11.4	12.5	13.5	14.1	
0 to 20	8.4	8.4	8.6	8.9	9.1	9.4	9.5	9.5	9.9	10.2	11.0	11.1	12.1	13.1	13.7	
-20 to 0	8.3	8.3	8.5	8.8	9.0	9.2	9.3	9.4	9.7	10.1	10.8	10.9	11.9	12.8	13.3	
-40 to -20	8.2	8.3	8.5	8.7	8.9	9.2	9.2	9.3	9.6	10.0	10.7	10.8	11.7	12.6	13.1	
-60 to -40(ref.)	8.3	8.3	8.5	8.8	9.0	9.2	9.3	9.3	9.6	10.0	10.7	10.8	11.6	12.5	12.9	
-70 to -60(ref.)	8.4	8.5	8.7	8.9	9.1	9.3	9.4	9.4	9.7	10.0	10.7	10.8	11.6	12.5	12.9	

Absolute $\Delta n / \Delta T$ [1E-6/°C]																
Temp. [°C]	1.083	t	s	A'	r	C	C'	He-Ne	d	e	F	F'	g	h	0.389	
80 to 90	8.0	8.1	8.4	8.6	8.9	9.2	9.3	9.4	9.7	10.2	11.1	11.2	12.4	13.5	14.2	
60 to 80	7.7	7.8	8.1	8.3	8.6	8.9	9.0	9.0	9.4	9.8	10.7	10.8	11.9	13.0	13.7	
40 to 60	7.4	7.4	7.7	7.9	8.2	8.5	8.5	8.6	8.9	9.4	10.2	10.3	11.4	12.4	13.1	
20~40	7.0	7.0	7.3	7.5	7.8	8.0	8.1	8.2	8.5	8.9	9.7	9.8	10.8	11.8	12.4	
0 to 20	6.6	6.6	6.9	7.1	7.3	7.6	7.7	7.7	8.0	8.4	9.2	9.3	10.3	11.2	11.8	
-20 to 0	6.2	6.3	6.5	6.7	6.9	7.2	7.2	7.3	7.6	8.0	8.7	8.8	9.7	10.6	11.2	
-40 to -20	5.8	5.9	6.1	6.3	6.5	6.7	6.8	6.9	7.1	7.5	8.2	8.3	9.2	10.0	10.5	
-60 to -40	5.5	5.5	5.7	5.9	6.1	6.3	6.4	6.4	6.7	7.0	7.7	7.8	8.6	9.4	9.9	
-70 to -60	5.2	5.2	5.4	5.6	5.8	6.0	6.0	6.1	6.4	6.7	7.3	7.4	8.2	9.0	9.4	

Coef. disp. form. (frac. eq.) (ref.)	
P1	1.06685910E-01
Q1	7.84959792E+01
P2	2.55453961E-02
Q2	3.84971138E-02
P3	3.94179537E-01
Q3	6.35402469E-03

Fitting error of disp. form. $\sigma$ [1E-6]		
	Visible	Infrared
Power ser. eq.	0.7	6.3
Frac. eq. (ref.)	0.6	6.7

Prod. Freq. (A to D)	A
----------------------	---

Similar glass type			
OHARA	-	HOYA	-
C.D.G.M	-	SCHOTT	-

2019-4-1	Transmittance
2018-9-1	CTE(-30,70)
2015-4-1	Color Code